REMARKS

Upon receipt of this response, the Examiner is respectfully requested to contact the undersigned representative of the Applicant to arrange a telephone interview concerning the inventive merits of this application.

Claims 11 and 13-16 are rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for the reasons noted in the official action. The rejected claims are accordingly amended, by the above claim amendments, and the presently pending claims are now believed to particularly point out and distinctly claim the subject matter regarded as the invention, thereby overcoming all of the raised § 112, second paragraph, rejections. The entered claim amendments are directed solely at overcoming the raised indefiniteness rejection(s) and are not directed at distinguishing the present invention from the art of record in this case.

Next, claim 9 is rejected, under 35 U.S.C. § 103, as being unpatentable in view of Podbielniak `796 and Kanel et al. `720. The Applicant acknowledges and respectfully traverses the raised obviousness rejection in view of the above amendments and the following remarks.

Podbielniak `796 is alleged to disclose a method for extracting impurities from liquids such as lubricating oils, using compressed solvents in countercurrent contact and contact with carbon dioxide that may be in the form of vapor. The Examiner points to page 3, column 1, lines 1-11 and 57-67 of the applied reference. This passage, however, relates to the introduction of an inert gas such as carbon dioxide in the interior of the casing in order *to control the pressure within the casing,* whereby a pressure regulator is provided for regulating the pressure in casing. It is clear from this passage that *the carbon dioxide is not used as a solvent and is by no means involved in the extraction process but instead merely serves to build up pressure in the interior of the casing.* Therefore, and in distinct contrast from the presently claimed method, it is respectfully submitted that Podbielniak `796 fails to in any way teach, suggest, disclose or in any way hint at the process step of treating the surface of the thin film of the liquid or dispersion to be treated with the compressed liquid gas and, in particular, treating the surface of the thin film of the liquid or dispersion to be treated with compressed liquid carbon dioxide.

According to Podbielniak `796's method, the carbon dioxide is merely used as an inert gas to build up pressure within the casing and, as mentioned above, not utilized as a solvent. That is, the carbon dioxide is not involved in the extraction process and is not used to treat the surface of the thin film of liquid or dispersion, as presently claimed. If the Examiner disagrees with the Applicant's position, the Applicant respectfully requests the Examiner to indicate the

specific passage or passages, or the drawing or drawings, which contain the necessary teaching, suggestion, disclosure and/or motivation.

It is to be appreciated that the most important feature of the presently claimed method is that the surface of the thin film is constantly renewed over at least a portion of a layer thickness of thin film by mechanically acting on the liquid or dispersion. According to the presently claimed invention, "mechanically acting" means that there is a body or an object acting on the liquid or dispersion. According to a preferred embodiment of the invention, either rods, scrapers, wipers or rollers mounted on radial arms of a rotor are used as the bodies or objects which mechanically act on the thin film of the liquid or dispersion. The mechanical action on the thin film exerts shearing and milling forces which accordingly induce high turbulence in the interior of the film, thus constantly conveying new partial regions of the layer thickness to the surface of the layer. This ensures that the distribution of the substance to be extracted, from the liquid or the dispersion, is constantly evened out so that the extraction can be carried out in a very efficient manner.

It is respectfully submitted that the method disclosed by Podbielniak `796 does not include the step of constantly renewing the surface of the film by mechanically acting on said thin film of liquid or dispersion, as claimed. Instead, the liquid to be treated builds up a film or layer on the inner walls of the device under the action of centrifugal force resulting from the rotation of the rotor (see page 2, column 2, lines 14-18). It is respectfully submitted, however, there is no mechanical action on the layer.

Turning now to Kanel et al. `720, it is respectfully submitted that the combination of Podbielniak `796's teaching with Kanel et al. `720's teaching still fails to overcome the above noted deficiencies of Podbielniak `796. That is, Kanel et al. `720, like Podbielniak `796, does not disclose constantly renewing the surface of the thin film by mechanically acting on said liquid or dispersion. In particular, Kanel et al. `720 does not even disclose the step of applying the liquid or dispersion as a thin film.

The Examiner apparently refers to Kanel et al. `720 because this reference allegedly teaches a solvent extraction utilizing liquid/supercritical carbon dioxide. There is no doubt, that there exists a number of solvent extraction processes utilizing liquid or supercritical carbon dioxide. However, the instant invention is not merely concerned with an extraction using liquid or supercritical carbon dioxide, but extends further than this. In particular, the presently claimed method comprises the steps of applying or forming the liquid or dispersion as a thin film over at least a portion of a thickness of the thin film by mechanically acting on the liquid or

dispersion. It is respectfully submitted that neither Podbielniak `796 nor Kanel et al. `720 in any way teach, suggest, disclose or in any way hint at renewing the surface of the thin film. Therefore, the method as recited in pending claim 9 is neither anticipated nor obvious in view of any permissible combination of the applied references. As such, the raised rejection in view of Podbielniak `796 and Kanel et al. `720 should be withdrawn at this time in view of the above amendments and remarks.

Next, claims 10, 11 and 13 - 17 are rejected under 35 U.S.C. 103(a) as being unpatentable over Podbielniak `796 in view of Vaughan `015 (United States Patent No. 2,819,015). But the Examiner also refers to Kanel et al. `720 (see page 4, third paragraph of the Office Action). Therefore it seems that claims 10, 11 and 13 - 17 stand rejected as being unpatentable over the combined teachings of Podbielniak `796, Kanel et al. `720 and Vaughan `015. The Applicant acknowledges and respectfully traverses the raised obviousness rejection in view of the above amendments and the following remarks.

With regard to claim 10, which depends from claim 9, the Applicant is of the opinion that this rejection is not well founded because the combination of Podbielniak `796 and Kanel et al. `720 do not even result in the method according to claim 9, as explained above, let alone the apparatus of claims 11 and 13-16. As Vaughan `015 fails to overcome or cure the above noted deficiencies of Podbielniak `796 and/or Kanel et al. `720, it is respectfully submitted that claim 9 is patentable and dependent claim 10 for at least the same reasons.

The same rational applies to claim 17 which essentially recites the limitation of claim 9 and 10 and in a slightly more limited form.

With regard to claims 11 and 13 - 16, which are apparatus claims instead of method claims, the Applicant notes that the Examiner did not provide any specific reason(s) why the apparatus claims are not patentable over the applied references cited. Instead, the Examiner essentially repeats the rational applied to claim 9 which, however, refers to the inventive method and not to the presently claimed apparatus.

Apparatus claim 11 comprises several structural features that are not in any way taught, suggested, disclosed or remotely hinted at by any permissible combination of the cited references. Further, the Examiner did not provide any arguments regarding how or why it would be obvious to modified or combine the Podbielniak `796 device with the features of Kanel et al. `720 and/or Vaughan `015 and allegedly arrive at the presently claimed invention. The Examiner merely argues that it would have been obvious to modify Podbielniak `796 by either employing carbon dioxide as alternative to the disclosed solvent, since this form of carbon

dioxide greatly enhances the solvation power. It has to be noted that claims 11 and 13 - 16 are directed to an apparatus, which can usually not be characterized by the mode of operation or by method features. Therefore, it is respectfully submitted that the question whether carbon dioxide in liquid or supercritical form as taught by Kanel et al. `720 could be used with the method disclosed by Podbielniak `796 is irrelevant to the apparatus claims. In any event, the applied combination of Podbielniak `796, Kanel et al. `720 and/or Vaughan `015 still fails to teach, suggest, disclose or in any way hint at the presently claimed device for extracting impurities from a liquid or solid dispersion by using a compressed liquid gas "including a pressure-tight reactor (1) having at least one charging opening (14) for the liquid or dispersion to be treated and the compressed liquid gas (16) as well as separate discharge openings (15, 17), wherein the charging opening (14) for the liquid or dispersion to be treated opens on the inner shell (13) of the reactor (1), and that a rotor (8) has radial arms which are arranged in the interior of the reactor (1) and carry at least one of rods (11), scrapers, wipers or rollers (12) extending in the direction of the axis of rotation (9), the radial arms of said rotor cooperating with the liquid or dispersion film on the inner shell (13) of the reactor (1), and the charging opening for the liquid or dispersion to be treated and the charging opening for the compressed liquid gas open into the reactor are arranged on opposite sides of the reactor." Such features are believed to clearly and patentably distinguish the presently claimed invention from all of the art of record, including the applied art of Podbielniak `796, Kanel et al. `720 and/or Vaughan `015.

If any further amendment to this application is believed necessary to advance prosecution and place this case in allowable form, the Examiner is courteously solicited to contact the undersigned representative of the Applicant to discuss the same.

In view of the above amendments and remarks, it is respectfully submitted that all of the raised rejection(s) should be withdrawn at this time. If the Examiner disagrees with the Applicant's view concerning the withdrawal of the outstanding rejection(s) or applicability of the Podbielniak `796, Kanel et al. `720 and/or Vaughan `015 references, the Applicant respectfully requests the Examiner to indicate the specific passage or passages, or the drawing or drawings, which contain the necessary teaching, suggestion and/or disclosure required by case law. As such teaching, suggestion and/or disclosure is not present in the applied references, the raised rejection should be withdrawn at this time. Alternatively, if the Examiner is relying on his/her expertise in this field, the Applicant respectfully requests the Examiner to enter an

affidavit substantiating the Examiner's position so that suitable contradictory evidence can be entered in this case by the Applicant.

In view of the foregoing, it is respectfully submitted that the raised rejection(s) should be withdrawn and this application is now placed in a condition for allowance. Action to that end, in the form of an early Notice of Allowance, is courteously solicited by the Applicant at this time.

The Applicant respectfully requests that any outstanding objection(s) or requirement(s), as to the form of this application, be held in abeyance until allowable subject matter is indicated for this case.

In the event that there are any fee deficiencies or additional fees are payable, please charge the same or credit any overpayment to our Deposit Account (Account No. 04-0213).

Respectfully submitted,

Michael J. Bujold, Reg. No. 32,018
Customer No. 020210
Davis Bujold & Daniels, P.L.L.C.
112 Pleasant Street
Concord, NH 03301-2931
Telephone 603-226-7490
Facsimile 603-226-7499
E-mail: patent@davisandbujold.com